



# KITTELSON LLC

FORENSIC TRANSPORTATION ENGINEERING

H. GENE HAWKINS, JR., PH.D., P.E.  
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## AREAS OF EXPERTISE

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- Traffic engineering policy, standards, and guidelines
- Traffic control infrastructure
- Retroreflectivity and visibility of traffic signs and pavement markings
- Road design
- Driver response to traffic control devices
- Traffic signal design
- Work zone traffic control
- Freeway operations
- Historical aspects of transportation engineering

## EDUCATION

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- Doctor of Philosophy, Civil Engineering, Texas A&M University, College Station, Texas, May 1993
- Master of Engineering, Civil Engineering, Texas A&M University, College Station, Texas, May 1983
- Bachelor of Science, Civil Engineering, Texas A&M University, College Station, Texas, May 1981, Cum Laude

## PROFESSIONAL LICENSE

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- Registered Professional Engineer, State of Texas, No. 61509

## EXPERIENCE

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- Kittelson LLC, College Station, Texas: Senior Principal Engineer, 2021-Present.
  - Texas Department of Transportation, Bryan District, Bryan, Texas: Transportation Engineer 2019-2020 while on Faculty Development Leave (sabbatical) from Texas A&M University.
  - Texas A&M University, Department of Civil Engineering, College Station, Texas: Professor Emeritus, 2022-Present; Professor, 2016-2022; Associate Professor with tenure, 2007-2016; Division Head, Transportation and Materials Division, 2004-2011; Associate Professor without tenure, 2004-2007.
  - Texas A&M Transportation Institute, The Texas A&M University System, College Station, Texas: Research Engineer, 2001-2022; Associate Director-Transportation Scholars Program, Texas A&M University Southwest Region University Transportation Center, 2006-2016; Division Head, Transportation Operations Division, 1999-2004; Associate Research Engineer, 1993-2001; Program Manager, System Implementation Program, 1993-1999; Assistant Research Engineer, 1987-1993; Engineering Research Associate, 1986-1987.
  - Hawkins Engineering, College Station, Texas: Owner, 1994-2021.
  - Walton & Associates/Consulting Engineers, Inc., Bryan, Texas: Associate, 1983-1986.
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- Walter P. Moore & Associates, Houston, Texas: Engineer-in-Training, Summers, 1981-82.

## **SELECTED AWARDS**

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- 2018 Public Sector recipient of the American Road & Transportation Builders Association John “Jake” Landen Memorial Safety Award, awarded June 2018.
- 2012 Wilbur S. Smith Distinguished Transportation Educator Award, Institute of Transportation Engineers, August 2012.
- 2010 Transportation Engineer of the Year, Texas District of the Institute of Transportation Engineers, June 2010.
- Fellow of the Institute of Transportation Engineers, September 2006.
- Texas Department of Transportation Top Research Innovation Award for the document Sign Crew Field Book, 2001.
- Texas Department of Transportation Top Research Innovation Award for the document Guidelines for Performing Traffic Signal Warrant Analysis, 1999.
- Texas A&M Transportation Institute Trinity Researcher Award, December 1998.
- Teaching Awards
  - ♦ Dick and Joyce Birdwell Award for Teaching Excellence, Zachry Department of Civil Engineering, December 2021.
  - ♦ 2015-2016 College of Engineering William Keeler Memorial Fund Teaching Award, February 2016.
  - ♦ 2015 Association of Former Students College Level Teaching Award, Texas A&M University Dwight Look College of Engineering, July 2015.
  - ♦ 2013 Zachry Award for Teaching Excellence, Texas A&M University Zachry Department of Civil Engineering, December 2013.
  - ♦ Dick and Joyce Birdwell Endowed Teaching Award, Zachry Department of Civil Engineering, July 2008.
- Best Paper Awards
  - ♦ 2016 Young First Author Best Paper Award, Operations Section from the Transportation Research Board Traffic Control Devices Committee for the paper entitled Guidelines for Traffic Control Devices at Curves, Brimley, B.K.\* , P.J. Carlson, H.G. Hawkins, Jr., S. Hines, F. Gross, H. McGee, awarded January 2017.
  - ♦ 2016 Best Paper Award from the Transportation Research Board Traffic Control Devices Committee for the paper entitled Guidelines for Traffic Control Devices at Curves, Brimley, B.K.\* , P.J. Carlson, H.G. Hawkins, Jr., S. Hines, F. Gross, H. McGee, awarded January 2016.
  - ♦ 2009 Technical Paper Award from the Texas District of the Institute of Transportation Engineers for the paper entitled Revised Process for Work Zone Decision-Making Based on Quantitative Performance Measures, T.W. Hartmann\* and H.G Hawkins, August 2009.
  - ♦ 2008 Outstanding Paper Award from the Transportation Research Board Geometric Design Committee for the paper entitled Assessment of Sag Curve Design Criteria Considering Modern Headlamp Performance, H.G. Hawkins and M. Gogula\*, awarded January 2009.
  - ♦ Institute of Transportation Engineers, 1995 Traffic Engineering Council Award for Best Paper Presented at the 1994 Annual Meeting, for the paper entitled “Guidelines for the Use of Flashing Operation at Signalized Intersections.” K.C. Kacir, H.G. Hawkins, R.J. Benz, and M.E. Obermeyer, awarded August 1

## **TEACHING EXPERIENCE**

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- Primary Courses, Zachry Department of Civil & Environmental Engineering, Texas A&M University
  - ♦ CVEN 307, Transportation Engineering

- ♦ CVEN 457/696, Urban Traffic Facilities
- ♦ CVEN 625, Traffic Engineering: Design
- Developed and conducted (as Principal Investigator) the following professional development courses for the Federal Highway Administration:
  - ♦ Sign retroreflectivity train-the-trainer courses.
  - ♦ Minimum sign retroreflectivity workshops for public officials.
  - ♦ Minimum pavement marking retroreflectivity workshops for public officials.
  - ♦ Freeway traffic operations (through the National Highway Institute).
- Professional development course instructor for the following courses conducted by the Texas Engineering Extension Service:
 

<ul style="list-style-type: none"> <li>♦ AASHTO Green Book Concepts</li> <li>♦ Freeway Design and Operations</li> <li>♦ Freeway Traffic Operations.</li> <li>♦ Highway Capacity – Interrupted Flow</li> <li>♦ Highway Design</li> </ul>	<ul style="list-style-type: none"> <li>♦ Traffic Engineering Characteristics</li> <li>♦ Traffic Management</li> <li>♦ Traffic Signal Design</li> <li>♦ Transportation Engineering Concepts</li> </ul>
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## PROFESSIONAL SERVICE

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- National Committee on Uniform Traffic Control Devices (NCUTCD): Member, 2002-Present; Associate Member, 1995-2002; Technical Committee Member, 1992-Present.
  - ♦ Chair (elected 2018, re-elected 2020, 2022, 2024), 2018-Present.
  - ♦ Vice-Chair for Programs (elected 2012, re-elected 2014, 2016), 2012-2018.
  - ♦ Executive Committee: Member, 2008-Present.
  - ♦ Edit Committee: Chair 2012-2018 (appointed); Secretary, 1994-1998.
  - ♦ ITE Delegation: Chair 2008-2012; Member, 2002-Present; Associate Member, 1995-2002.
  - ♦ Markings Technical Committee: Chair, 2003-2012 (appointed); Member, 2003-Present.
  - ♦ MUTCD Strategic Planning Task Force: Chair, 2008-2014 (appointed).
  - ♦ Regulatory/Warning Signs Technical Committee: Secretary, 1998-2002 (appointed); Member, 1993-2002.
  - ♦ Signals Technical Committee: Member, 1992-1993.
  - ♦ Research Committee: Member, 1992-2006.
- Transportation Research Board (TRB): 1989-Present.
  - ♦ TRB Safety and Operations Group, Member, 2020-2023.
  - ♦ TRB Operations and Preservation Group, Member, 2015-2020.
  - ♦ TRB Traffic Control Devices Committee; Committee Member, 1994-2017, 2020-Present.
    - Committee Chair, 2001-2007 (appointed).
    - Committee Secretary, 1995-2001.
    - Subcommittee Chairman, All-White Pavement Markings Session, 1995.
    - Subcommittee Chairman, Metric Traffic Control Devices Session 1994.
  - ♦ TRB Tort Liability and Risk Management Committee; Committee Member, 2002-2017.
  - ♦ TRB Transportation Education and Training Committee.
    - Subcommittee on Undergraduate and Graduate Education, member, 2015-present.
  - ♦ TRB Roundabout Committee; Committee Member, 2012-2015.
  - ♦ TRB Signing and Marking Materials Committee; Committee Member, 1994-2010, 2018-2020.
  - ♦ TRB User Information Systems Committee; Committee Member, 1993-1995.
- Institute of Transportation Engineers (ITE): Fellow 2006-Present, Member, 1993-2006; Associate Member, 1987-1993.
  - ♦ ITE Delegation to National Committee on Uniform Traffic Control Devices: Chair 2008-Present; Member, 2002-Present; Associate Member, 1995-2002.

- ♦ Transportation Educators Council: Executive Committee, 2012-2018; Member, 1992-1994, 2009-Present.
- ♦ Faculty Advisor, Texas A&M University Student Chapter, 2007-2010.
- ♦ Expert Witness Council; Member, 1995-2008.
- ♦ Committee on Historical Aspects of Transportation Engineering; Chair, 1996-1999; Member, 1990-1999.
- ♦ Traffic Engineering Council; Member, 1997-2004.
- ♦ Texas Section, Member; 1987-Present.
  - Local Arrangement Committee member, event co-chair, March 2015.
  - Local Arrangement Committee member, treasurer, June 1994.
- The Signage Foundation, Inc.
  - ♦ Academic Advisory Council for Signage Research and Education (AACSR): Member 2014-2018.
    - Vice-Chair of Executive Committee 2014-2016 (elected).
- Research Panels
  - ♦ National Science Foundation (NSF): panelist, 2006.
  - ♦ National Cooperative Highway Research Program (NCHRP) Project 5-18, Color Effectiveness of Yellow Pavement Marking Materials: Panel Member, 2002-2008.
  - ♦ NCHRP Program Synthesis 31-07, Temporary and Long-Term Pavement Markings: Panel Member, 1999-2002.
  - ♦ Transit Cooperative Research Program (TCRP) Panel A-9, Signs and Symbols in Transit Facilities: Panel Member, 1993-1995.
- American Traffic Safety Services Association (ATSSA): Public Official Member, 1994-2008; Individual Member, 2022-present.
  - ♦ Roadway Worker Protection Council, Friend, 2022-present.
  - ♦ Pavement Marking Committee: Member, 2001-2007.
    - Visibility Task Force: Chair, 2003-2006.
  - ♦ Sign Committee: Member, 1996-1998.
- Human Factors and Ergonomics Society (HFES): Member, 1999-2003.
- Highway Innovative Technology Evaluation Center (HITEC)
  - ♦ Pavement marking retroreflectometer: Chair, 1998-1999.
  - ♦ ALLSIGN Stop sign panel: Member, 1996-1998.
- American Association of State Highway and Transportation Officials (AASHTO)
  - ♦ Task Force on Sign and Pavement Marking Retroreflectivity: Member, 1999-2002.
- National Academy of Engineering (NAE)
  - ♦ Second Annual Symposium on Frontiers of Engineering: Participant, 1996.
  - ♦ Third Annual Symposium on Frontiers of Engineering: Organizing Committee Member, 1996-1997; Participant, 1997.
- Texas Department of Transportation (TxDOT)
  - ♦ Traffic Operations Technical Advisory Panel: Member, 1998-2004.

## **REFEREED JOURNAL PUBLICATIONS (2014-Present)**

(Note: \* indicates a graduate/former student as an author)

- Hawkins, Jr., H.G. 88 Years of MUTCD Editions: How the New MUTCD Evolved. In *ITE Journal*, Institute of Transportation Engineers, Washington, D.C., April 2024.
- Hawkins, Jr., H.G. Sensitivity Analysis of Sign Luminance as a Function of Input Factors. In *Transportation Research Record 2676, The Journal of the Transportation Research Board, Transportation Research Board*, Washington, D.C., 2022.
- Hawkins, Jr., H.G., K. Fitzpatrick, and M.A. Brewer. Developing and Implementing Manual on Uniform Traffic Control Devices Criteria for Selecting Traffic Control for Unsignalized Intersections.

- In *Transportation Research Record, The Journal of the Transportation Research Board 2673*, Transportation Research Board, Washington, D.C., pp 319-331, 2019.
- Finley, M.D., R.E. Avelar, H.G. Hawkins, Jr. Traffic Control Devices for Detering Wrong-Way Movements at Unsignalized Intersections on Divided Highways. In *Transportation Research Record, The Journal of the Transportation Research Board 2673*, Transportation Research Board, Washington, D.C., pp 670-681, 2019.
  - Brown, L.\* , K. Dixon, G. Hawkins. Quantifying Access Management on Arterial Roadways. Paper No 18-01612. In *Transportation Research Record 2672, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp 129-139, August 2018.
  - Hawkins, Jr., H.G. and B.G. Dillman. Evaluation of Mid-Point Runway Marking for General Aviation Airports. Paper No. 18-01258. In *Transportation Research Record 2672, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp 106-116, July 2018.
  - Zhou, Hongmin\*, H.G. Hawkins, Jr., Y. Zhang. Arterial Signal Coordination with Uneven Double Cycling. In *Transportation Research Part A: Policy and Practice*, Elsevier Ltd., Volume 103, pp 409-429, September 2017.
  - Hawkins, Jr., H.G. and K. Chang. Employers' Perspectives on Needs for Critical Skills and Knowledge in the Transportation Field. In *ITE Journal*, Institute of Transportation Engineers, Washington, D.C., June 2016.
  - Khazraee, S. Hadi \* and H.G. Hawkins, Jr. Revised Guidelines for Designing Median Openings to Accommodate Simultaneous Left Turns, *ASCE Journal of Transportation Engineering*, Vol. 142, Issue 10, October 2016.
  - Hawkins, Jr., H.G., B.K. Brimley\*, P.J. Carlson. Updated Model for Advance Placement of Turn and Curve Warning Signs. Paper No. 16-1748. In *Transportation Research Record 2555, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp. 111-119, 2016.
  - Brimley, B.K.\* , P.J. Carlson, H.G. Hawkins, Jr., S. Hines, F. Gross, H. McGee. Guidelines for Traffic Control Devices at Curves. Paper No. 16-1654. In *Transportation Research Record 2555, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp. 103-110, 2016.
  - Hawkins, Jr., H.G. The MUTCD Turns 80: Time for a Makeover? In *ITE Journal*, Institute of Transportation Engineers, Washington, D.C., November 2015. (Note, op/ed article with abbreviated peer-review process).
  - Carlson, P., B. Brimley, H.G. Hawkins, S. Himes, H. McGee, F. Gross. Traffic Control Device Guidelines for Curves, Unpublished Final Report, National Cooperative Highway Research Program, April 2015.
  - Khazraee, S. Hadi \* and H.G. Hawkins, Jr. Criteria for Determining the Number of Intersections at a Divided Highway Junction: Recommendations for Changes to the MUTCD, Paper No. 15-0964. In *Transportation Research Record 2492, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp. 23-32, 2015.
  - Brimley, B.K.\*, P.J. Carlson, H.G. Hawkins, Jr. Evaluating Unfamiliar Driver Visual Behavior on Horizontal Curves Using Fixation Heat Maps, Paper No. 14-4247. In *Transportation Research Record 2458, The Journal of the Transportation Research Board*, Transportation Research Board, Washington, D.C., pp. 16-26, 2014.
  - Brown, L\* , H.G. Hawkins, Jr. Addressing the Need for Consistent Traffic Control Devices at Channelized Right Turn Lanes. In *ASCE Journal of Transportation Engineering*, Vol. 140, No. 10, October 2014.

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## **PUBLICATION OF BOOKS OR AUTHORITATIVE REFERENCES (2014-Present)**

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- Hawkins, Jr., H.G. Chapter 7: Traffic Flow Characteristics for Uninterrupted Flow Facilities. In *Traffic Engineering Handbook, 7<sup>th</sup> Edition*. Institute of Transportation Engineers, Washington, D.C., 2016.
- Dawn Jourdan, Kathryn Hurd, Gene Hawkins, and Kimberly Winson-Geideman. Evidence Based Sign Regulation: Regulating Signage on the Basis of Empirical Wisdom. In the *Zoning and Planning Law Handbook, 2014 edition* (reprinted peer-reviewed journal article), Thomson Reuters, 2014.
- Hawkins, Jr., H.G. Traffic Control Devices. In the *Encyclopedia of Transportation: Social Science and Polity*, SAGE Publications, Thousand Oaks, California, pp. 1349-1354, 2014.

## **RESEARCH REPORTS (2014-Present)**

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- Hawkins, Jr., H. Gene. Guidelines for Selecting Sign Sheeting Materials for AASHTO M268, Final Report, National Cooperative Highway Research Program Project 20-07, Task 374, May 2022.
- Hawkins, Jr., H. Gene. Research on Traffic Sign Retroreflective Sheeting Performance: A Synthesis of Practice. TRS2101, Minnesota Department of Transportation, April 2021.
- Finley, M.D., R.E. Avelar, S.P. Venglar, H.G. Hawkins, and H. Al-Deek. Traffic Control Devices and Measures for Detering Wrong-Way Movements. NCHRP Report 881, National Cooperative Highway Research Program, Transportation Research Board, Washington, D.C., 2018.
- Carlson, P., B. Brimley\*, G. Hawkins, H. McGee, F. Gross, S. Himes. Traffic Control Device Guidelines for Curves, Final Report. NCHRP Project 3-106, February 2015 draft.
- Fitzpatrick, K., M. Brewer, G. Hawkins, J. Pline, P. Koonce, P. Carlson, and V. Iragavarapu. Potential MUTCD Criteria for Selecting the Type of Control for Unsignalized Intersections, NCHRP Web-Only Document 213, March 2014.

## **INVITED SEMINARS (2014-Present)**

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- “MUTCD: Past, Present & Future.” Presented at the ITE Texas District Spring Conference, Texas Institute of Transportation Engineers, Lubbock, Texas, April 2023.
- “The MUTCD & the NCUTCD.” Presented at the ITE Texas District Spring Conference, Texas Institute of Transportation Engineers, Lubbock, Texas, April 2023.
- “Planning the 12th MUTCD Edition: NCUTCD and 12th Edition Planning.” Presented at the 101st Annual Meeting, Transportation Research Board, Washington, D.C., January 2022.
- “A Century of Traffic Control Devices and What Lies Beyond.” Presented at the 95th Annual Meeting, Transportation Research Board, Washington, D.C., January 2020.
- “MUTCD: Past, Present, and Future.” Presented to the AASHTO Committee on Traffic Engineering, Columbus, OH, June 2019.
- “Traffic Sign Practices in the United States” Presented at First International Symposium on Technological Innovations in Traffic Signs, Nanjing, China, March 2017.
- “Speeding Up the Process: Getting TCD Guidelines into Practice.” Presented at the ITE Annual Meeting, Anaheim, California, August 2016.
- “Rules of the Road.” Panelist in session at Eno Policy Summit, Washington, D.C., November 2015.
- “Assessment of Employers’ Perspectives on Needs for Critical Skills and Knowledge in the Transportation Field.” Presented at the ITE Annual Meeting, Hollywood, Florida, August 2015.
- “Back to the MUTCD Future.” Presented at the TexITE District Meeting, College Station, Texas, March 12, 2015.
- “On-Premise Signing: Reflections of a Traffic Engineer.” Keynote address to the Watchfire Dealers Council Meeting, Nashville, Tennessee, September 10, 2014.
- “Challenges and Solutions Associated with the U.S. and Canadian MUTCDs.” Presented at the American Public Works Association Congress, Toronto, Ontario, August 2014.

- “The MUTCD: Its History and Future.” Keynote address to the Dallas-Fort Worth Joint Section Meeting of the Texas District of ITE, Grand Prairie, Texas, July 17, 2014.
- “The MUTCD: Its History and Future.” Presented at the ASCE Transportation and Development Institute Conference, Orlando, Florida, June 11, 2014.

### **RESEARCH PRESENTATIONS (2014-Present)**

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- “Evaluation of Sign Sheeting Performance.” Presented at the AASHTO Committee on Traffic Engineering Annual Meeting, Virginia Beach, VA, June 2022.
- “Sensitivity Analysis of Sign Luminance as a Function of Input Factors.” Presented at the 101st Annual Meeting, Transportation Research Board, Washington, D.C., January 2022.
- “Updated Model for Advance Placement of Turn and Curve Warning Signs.” Presented at the 95<sup>th</sup> Annual Meeting, Transportation Research Board, Washington, D.C., January 2016.
- “NCUTCD 20-year vision for the MUTCD.” Presented at the 93<sup>rd</sup> Annual Meeting, Transportation Research Board, Session 276, Washington, D.C., January 2014.
- “Statistical Analysis of the Traffic Safety Impacts of On-Premise Digital Signs.” Presented to the Digital Billboards Joint Subcommittee at the 93<sup>rd</sup> Annual Meeting, Transportation Research Board, Washington, D.C., January 2014.